

**FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION***All sections must be addressed, or the application will be considered invalid***I. APPLICANT INFORMATION**

- A. Applicant Name: Pat Haughian - Badlands Cattle Co.
- Mailing Address: 802 Milwaukee Road
- City: Terry State: MT Zip: 59349
- Telephone: 853-1135/ 406-635-5691 E-mail: _____
- B. Contact Person (if different than applicant): _____
- Address: _____
- City: _____ State: _____ Zip: _____
- Telephone: _____ E-mail: _____
- C. Landowner and/or Lessee Name
(if different than applicant): _____
- Mailing Address: _____
- City: _____ State: _____ Zip: _____
- Telephone: _____ E-mail: _____

II. PROJECT INFORMATION

- A. Project Name: Spillway Pipe Replacement & Dam Head Cut Repairs - Haughian Bass Reservoir
- River, stream, or lake: Haughian Bass Reservoir
- Location: Township: 12N Range: 48E Section: 9
- Latitude: 46.81708 Longitude: -105.68968 *within project (decimal degrees)*
- County: Custer
- B. Purpose of Project:

Primary need is replacing the ice-damaged section of the vertical spillway pipe, trash rack, and concrete pad at Haughian's Bass Reservoir. Secondary need is reducing future expansion of head cut on west end of dam. Work includes filling head cut and regrading dam barrow area to route run off water to alternative location. See attached summary describing current conditions.

Haughian Bass Reservoir spillway repair

C. Brief Project Description (attach additional information to end of application):

Shifting ice damaged the existing spillway tube, concrete foundation and trash rack in March 2019. Sandbags were added to the damaged pipe to reduce water loss and minimize additional damage from water levels. Failure to repair the pipe could compromise the spillway over time and loss of 3-4 feet of water depth. The lost storage capacity also increases the risk of fish kills during subsequent winter months.

See attached summary summary with pictures demonstrating damaged structure and pictures of proposed repairs similar to spillway structure at nearby South Fork Reservoir in Prairie County.

D. Length of stream or size of lake that will be treated: 45 surface acres

E. Project Budget:

Grant Request (Dollars): \$ 4,100.00

Matching Dollars: \$ 0.00

Matching In-Kind Services:* \$ 483.20

**salaries of government employees are not considered matching contributions*

Total Project Cost: \$ 4,100.00

F. **Attach** itemized (line item) budget – see *budget template*

Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support and fish biologist support, and/or other information

G. necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete a *supplemental questionnaire*. (<http://fwp.mt.gov/fwpDoc.html?id=36110>)

H. **Attach** land management & maintenance plans that will ensure protection of the reclaimed area.

III. PROJECT BENEFITS (attach additional information to end of application):

A. What species of fish will benefit from this project?

Fathead minnows, largemouth bass, smallmouth bass, yellow perch and northern pike.

Haughian Bass Reservoir spillway repair

B. How will the project protect or enhance wild fish habitat?

Repairing the spillway tube maximizes the volume, surface acreage and water depth of the reservoir. The only source of water inflows is seasonal runoff events (snow melt or thunderstorms) within the ephemeral drainage upstream of the dam. The currently damaged spillway pipe reduces the maximum water depth and storage capacity by approximately 3.0-4.0 feet. Repairing the spillway pipe enhances and protects fish habitat by maximizing the water depth which is a critical factor in prairie ponds for fish survival during hot water temperatures in August and also reduces the potential of fish kills during the ice covered winter months. Repairs to the spillway pipe and head cut on the west end of the dam also protect the long-term existence of the reservoir and associated fishery.

C. Will the project improve fish populations and/or fishing? To what extent?

Angler opportunities at prairie ponds in eastern Montana is limited. The vast majority of prairie ponds are depth limited and frequently experience partial or total fish kill during winter months. Reestablishing fisheries following winter kill requires 2-3 years. Haughian's Reservoir is larger and deeper than most prairie ponds, making it a critical resource to protect and enhance when possible. Maximizing water collections (depth and surface acreage) within the reservoir increases aquatic habitat and corresponding fish production within the reservoir. This also decreases the potential frequency and magnitude of fish kills during winter months. In general terms, this increases fishing success due to increased fish densities and diversity of year classes.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?

Fixing the spillway pipe increases fish production and survival, thereby increases angling opportunity for the existing wild fish. The reservoir's larger than average size for prairie ponds in eastern Montana, increases the suitability for multiple warm water fish species. Montana Fish, Wildlife & Parks has occasionally collected smallmouth bass and yellow perch from the pond to establish wild fish populations in other area ponds.

Mutual partnerships, like this one to repair damaged infrastructure, is key to establishing and maintaining angler access to private waters in Montana.

E. The project agreement includes a 20-year maintenance commitment. Please discuss your ability to meet this commitment.

Will continue cooperative partnership with FWP to sustain the fishery and provide angler access through the R7 Pond Fishing Program. Will monitor condition and function of the spillway pipe and head cut repairs.

F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?

Spring runoff in 2019 was early and quick. The rising water level floated and released the mostly intact ice sheet from the ponds shoreline. A substantial wind followed which pushed the ice sheet into the spillway pipe. This broke the concrete cap surrounding the pipe which lead to the pipe failure (bending and unraveling). The ice damage reduces the potential water storage in the pond by 3.0 - 4.0 vertical feet.

Haughian Bass Reservoir spillway repair

G. What public benefits will be realized from this project?

Maximizing water depth and surface acreage increases the potential fish production within the reservoir and diversifies angler opportunity in the local area. Maintaining the fisheries has a secondary benefit of increasing sources for FWP to conduct wild fish transfers to other waters. Angler access to fish the pond will continue through the R7 Pond Fishing Program.

H. Will the project interfere with water or property rights of adjacent landowners? (explain):

No, the landowner owns all the surface water rights located within the ephemeral drainage between this pond and the Yellowstone River.

I. Will the project result in the development of commercial recreational use on the site? (explain):

No.

J. Is this project associated with the reclamation of past mining activity?

No.

Each approved project applicant must enter into a written agreement with Montana Fish, Wildlife & Parks specifying terms and duration of the project. The applicant must obtain all applicable permits prior to project construction. A competitive bid process must be followed when using State funds.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature: Pat Haughian Date: 5/29/19

Sponsor (if applicable): _____

Submittal: Applications must be *signed and received before* December 1 and June 1 of each year to be considered for the subsequent funding period. Late or incomplete applications will be rejected.

Mail to: Montana FWP Fish Management Bureau PO Box 200701 Helena, MT 59620-0701	Email: Michelle McGree mmcgree@mt.gov (electronic submissions must be signed) For files over 10MB, use https://transfer.mt.gov
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Applications may be rejected if this form is modified.

Haughjian Bass Reservoir spillway repair

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Both tables must be completed or the application will be returned

# WORK ITEMS (ITEMIZE BY CATEGORY)	NUMBER OF UNITS	UNIT DESCRIPTION *	COST/UNIT	TOTAL COST	CONTRIBUTIONS			
					FUTURE FISHERIES REQUEST	IN-KIND SERVICES**	IN-KIND CASH	TOTAL
Personnel***								
Survey				\$ -				\$ -
Design				\$ -				\$ -
Engineering				\$ -				\$ -
Permitting				\$ -				\$ -
Oversight				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$ -	\$ -	\$ -	\$ -	\$ -
Travel								
Mileage	280	miles	\$0.44	\$ 123.20		123.20		\$ 123.20
Per diem				\$ -				\$ -
			Sub-Total	\$ 123.20	\$ -	\$ 123.20	\$ -	\$ 123.20
Construction Materials****								
Culvert 48"	8	feet	\$50.00	\$ 400.00	400.00			\$ 400.00
Pipe (trash rack) 4.5"	10	feet	\$25.00	\$ 250.00	250.00			\$ 250.00
Pallet of Sackcrete	1		\$150.00	\$ 150.00	150.00			\$ 150.00
Sandbags - landowner	30	bags	\$4.00	\$ 120.00		120.00		\$ 120.00
Sandbags - FWP	60	bags	\$4.00	\$ 240.00		240.00		\$ 240.00
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$ 1,160.00	\$ 800.00	\$ 360.00	\$ -	\$ 1,160.00
Equipment and Labor								
Excavator	3	days	\$1,100.00	\$ 3,300.00	3,300.00			\$ 3,300.00
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$ 3,300.00	\$ 3,300.00	\$ -	\$ -	\$ 3,300.00
Mobilization								
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
				\$ -				\$ -
			Sub-Total	\$ -	\$ -	\$ -	\$ -	\$ -
TOTALS				\$ 4,583.20	\$ 4,100.00	\$ 483.20	\$ -	\$ 4,583.20

OTHER REQUIREMENTS:

All of the columns in the budget table and the matching contribution table MUST be completed appropriately or the application will be invalid. Please see the example budget sheet for additional clarification.

*Units = feet, hours, inches, etc. Do not use lump sum unless there is no other way to describe the costs.

**Can include in-kind materials. Justification for in-kind labor (e.g. hourly rates used for calculations). [Describe here or in text.](#)

Reminder: Government salaries cannot be used as in-kind match

***The Review Panel suggests that design and oversight costs associated with a proposed project not exceed 15% of the total project budget. If design and oversight costs are in excess of 15%, applications must include a minimum of two competitive bids for the cost of undertaking the project.

****The Review Panel recommends a maximum fencing cost of \$1.50 per foot. Additional costs may be the responsibility of the applicant and/or partners.

MATCHING CONTRIBUTIONS (do not include requested funds)

CONTRIBUTOR	IN-KIND SERVICE	IN-KIND CASH	TOTAL	Secured? (Y/N)
landowner- sand bags	\$ 120.00	\$ -	\$ 120.00	Y
FWP - sand bags	\$ 240.00	\$ -	\$ 240.00	Y
FWP - mileage	\$ 123.20	\$ -	\$ 123.20	Y
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
	\$ -	\$ -	\$ -	
TOTALS	\$ 483.20	\$ -	\$ 483.20	

Rehabilitation Project - Haughian Bass Reservoir

Prepared by Mike Backes – Region 7 Fisheries Manager

Project Need: shifting ice damaged the existing spillway tube and concrete foundation in March 2019 (Figure 2 & Picture 1). The landowner and FWP placed sandbags around the damaged pipe to reduce water loss and minimize additional damage from current water levels. Failure to repair the pipe could compromise the spillway over time and loss of 3-4 feet of water depth increases the risk of winter killing the fish population.

A secondary concern is a large head cut that is expanding on the west end of the dam (Figure 2 & Picture 2). Run off over the local landscape is expanding the depth and length of the head cut. Continued growth (depth and length) could compromise the integrity of the dam.

Project Proposals (theoretical concepts)

I. Spillway Pipe (primary need)

Hire contractor to 1) excavate approximately 4 feet vertical feet of soil to expose existing damaged spillway pipe; 2) cut off damaged section of pipe; 3) add collar and vertical pipe to elevation of prior structure, or replace entire section of existing vertical pipe; 4) replace fill around vertical pipe; 5) form and pour concrete pad (minimum size 8' X 8' by 14" thick); 6) install trash rack; and 7) provide and add rock armoring around cured concrete pad. See Picture 3 for potential example of a spill way tube design and trash rack that is recommended for this project.

II. Head cut West end of dam (secondary need – funding limited)

Hire contractor to 1) fill existing head cut; 2) re-slope area uphill of cut to drain runoff through downstream draw (cut drain through small saddle, install dike to route runoff to downstream draw). See figure 4 for details of head cut area.

Pond Location

Haughian Bass Reservoir is a 45 acre impoundment on private property located in northern Custer County in Eastern Montana (46.81708 -105.68968). The reservoir is adjacent to a large tract of public land owned by BLM in the Cheery Creek drainage (Figures 1 & 5). This includes the Terry Badlands located east of Haughian's Reservoir. The area is a popular recreation destination for hiking, hunting and fishing. Haughian's Reservoir is larger than most of the small ponds located in the area and supports an above average quality fishery composed of large mouth bass, smallmouth bass, yellow perch, and northern pike.

The Reservoir was stocked with fish for the first time in 1975. Several stocking efforts have occurred since (see Table 1). The most recent stocking was excess smallmouth bass from the Miles City Hatchery in 2018. The fishery has been managed within the R7 Pond Fishing Program and open to public access, through landowner permission, since the first stocking. It has been listed within the regional pond fishing guide for at least 30 years.

Haughian Bass Reservoir spillway repair

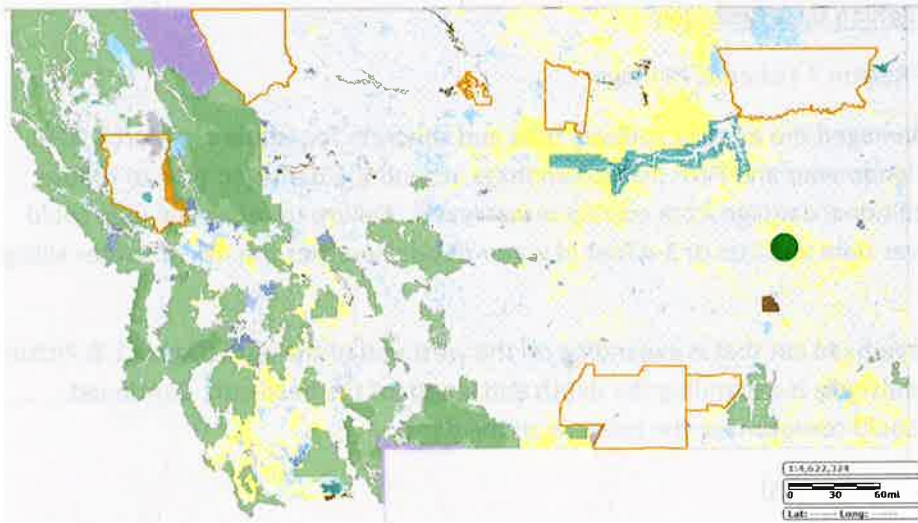


Figure 1 Reservoir location (green dot) is in Custer County north of Miles City.



Figure 2 Satellite image of Haughian Bass Reservoir; green circle damaged spillway pipe; red circle head cut location.

Existing Conditions – Spillway Pipe:



Picture 1 – A) closeup view of damaged spillway looking north; B) looking northeast; C) short-term fix with sandbags to reduce water loss.

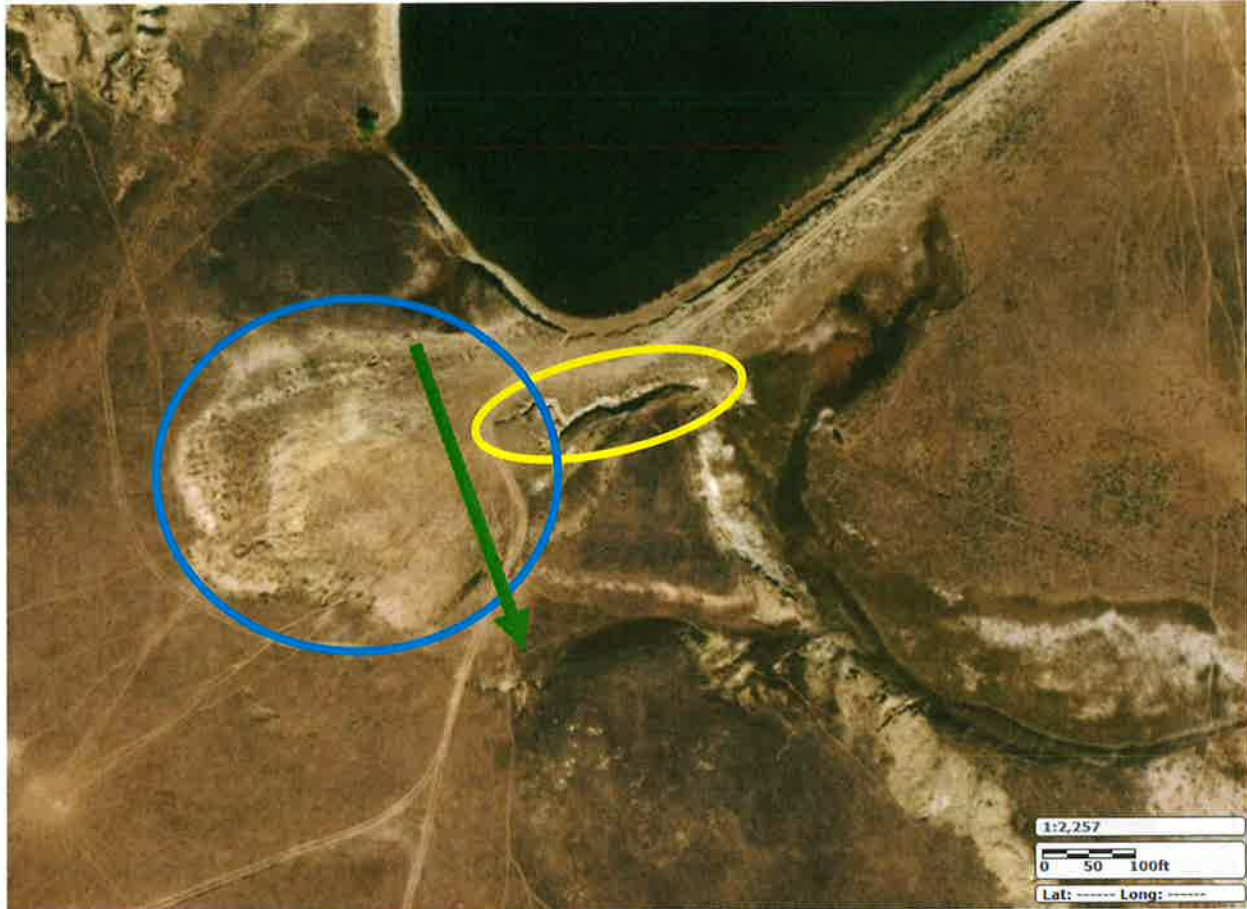


Figure 4 Head cut adjacent to dam (yellow circle), borrow area which is source of run off water (blue circle), and potetial dike location and cut in saddle to reroute run off water (green arrow).



Picture 2 View of head cut looking northwest.

Haughian Bass Reservoir spillway repair

Public Land Ownership at Haughian Bass Reservoir

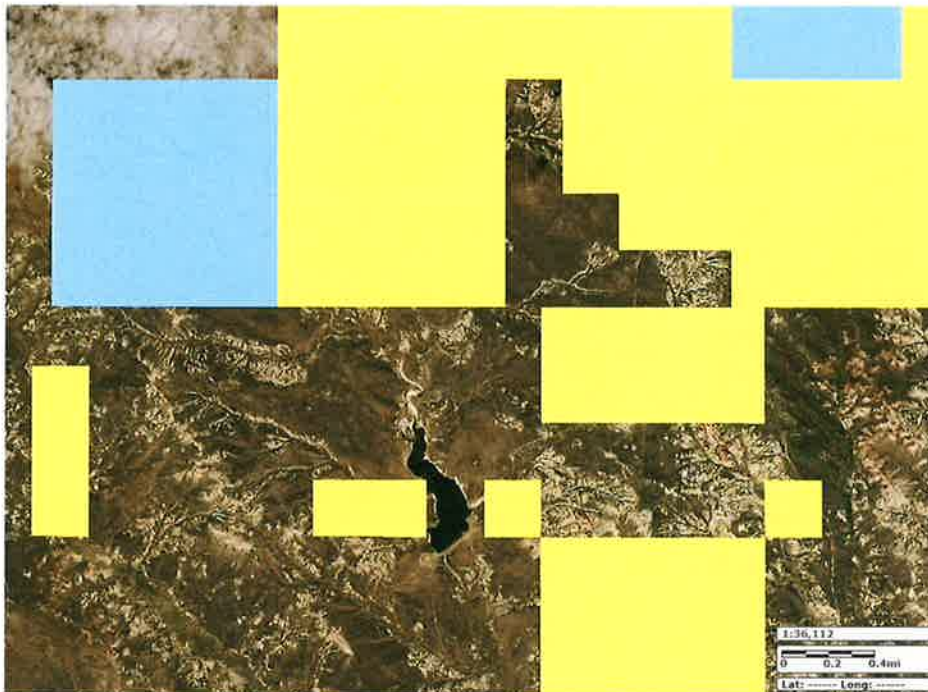


Figure 5 BLM (yellow) and State (blue) ownership near Haughian Bass Reservoir.



Picture 3 Spillway design at South Fork Reservoir in Prairie County.

Haughian Bass Reservoir spillway repair

Montana Fish, Wildlife, and Parks - Plant Report					
Report Date: 05/30/2019					
Water: Haughian Bass Pond					
Date	Species	Strain	Number	Size	Raising Hatchery
7/18/1975	17 - Largemouth Bass	M	3000	1	23 - Miles City - Federal
7/27/1989	73 - Smallmouth Bass		10000	1.5	14 - Miles City Fish Hatchery
9/10/1992	17 - Largemouth Bass		5071	2.1	14 - Miles City Fish Hatchery
8/10/1993	73 - Smallmouth Bass	M	5000	1.7	14 - Miles City Fish Hatchery
8/12/1997	73 - Smallmouth Bass	M	5000	2.8	14 - Miles City Fish Hatchery
8/6/1999	73 - Smallmouth Bass	M	5000	1.8	14 - Miles City Fish Hatchery
7/11/2001	73 - Smallmouth Bass	M	5500	1.4	14 - Miles City Fish Hatchery
7/16/2003	73 - Smallmouth Bass	M	4500	2	14 - Miles City Fish Hatchery
7/29/2011	17 - Largemouth Bass	M	1000	1.5	14 - Miles City Fish Hatchery
8/3/2018	73 - Smallmouth Bass	M	3000	2.23	14 - Miles City Fish Hatchery

Table 1. Stocking History at Haughian Bass Reservoir